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ABSTRACT

A study was conducted to investigate the peer concepts held by 16 second-grade, 17 fourth-grade, and 17 sixth-grade students. A paired comparisons sociometric procedure was used to obtain children's descriptions of their classmates in the areas of reading, mathematics, drawing, and an athletic skill (running). In addition, the procedure measured children's liking for classmates. Independent measures of each child's actual skills or characteristics were obtained from reading and mathematics achievement test scores, a measure of running speed, and teachers' ratings of drawing ability and popularity. Analyses indicated little differentiation of ability attributes by either the second or fourth graders. Sixth graders viewed drawing ability and mathematics skill as quite separate from other attributes, thus demonstrating partial differentiation of ability attributes. Accuracy of the children's choices relative to the objective measures showed increasing accuracy from second to fourth grade in judging reading skill, mathematics ability, and running speed. Decreased ability across grades was found in judging drawing ability. Moderate correspondence at younger levels, increasing through the sixth grade, was found between teachers' rankings of popularity and children's liking for peers. Findings thus indicated both the increasingly differentiated concepts of peers' abilities during the elementary school years and the limitations on concept differentiation resulting from changes in the salience of ability attributes over these years. (Author/RH)

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# Differentiation of Peers' Ability Attributes by Elementary School Children

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## Abstract

The study concerned peer concepts held by 16 second grade, 17 fourth grade, and 17 sixth grade children. A paired comparisons sociometric procedure was used to obtain children's descriptions of their classmates in areas of reading, mathematics, drawing, and an athletic skill (running), and also to measure children's liking for classmates. Independent measures of each child's actual skills or characteristics were also obtained: reading and mathematics achievement test scores, a measure of running speed, and teachers' ratings of drawing ability and popularity. Analyses indicated little differentiation of ability attributes by either the second or fourth graders. Sixth graders, on the other hand, viewed drawing ability and mathematics skill as quite separate from other attributes, thus demonstrating partial differentiation of ability attributes. Accuracy of the children's choices relative to the objective measures showed increasing accuracy from second to fourth grade in judging reading skill, mathematics ability, and running speed; decreased ability over grade in judging drawing ability; and moderate correspondence at younger levels, increasing through the sixth grade, between teachers' rankings of popularity and children's liking for peers. Findings thus indicate both the increasingly differentiated concepts of peers' abilities during the elementary school years and the limitations on concept differentiation resulting from changes in the salience of ability attributes over these years.

## Purpose

According to Shantz (1983), the concept of differentiation can be used to characterize age-related improvements in person perception. She notes that the younger child tends not to differentiate within the person both good and bad qualities, contradictory tendencies, and the like. It appears that differentiations begin to occur and stabilize during middle childhood, although predominant use of the method of free description to gather data may be responsible for some of the similarities shown in different studies. Most investigations have employed methods that require considerable verbal competence from research participants. Recently, Moely, Lockman, Trejos, and Herz (1985) adapated a paired comparisons sociometric procedure to investigate the development of children's concepts of their classmates. In an initial study, they demonstrated that preschoolers have little awareness of their classmates' cognitive or behavioral characteristics. When asked to select classmates who are helpful to the teacher, competent with numbers, quiet, or likeable, preschoolers show little differentiation, selecting for each attribute children who were described by classroom teachers as popular in the classroom. Even at the second grade level, children often failed to differentiate peer attributes, showing similar choices when asked to identify children who are liked, who become angry, who are competent in mathematics, and who are fast runners. Finally, in a sample of fourth grade children, both differentiation and accuracy relative to objective criteria were demonstrated. The present study was an extension of this work. Here, we were interested in a narrower domain of attributes, focusing on those

concerned specifically with various abilities that children may demonstrate in a school setting. The attributes assessed were competence in reading, competence in mathematics, drawing skill, and running speed, as well as the extent to which each child was liked by the respondent. Comparisons of children at second, fourth, and sixth grade levels were made, in order to describe the development of differentiated and accurate peer concepts within the ability domain.

## Method

Children's peer concepts were assessed using a paired comparisons picture sociometric procedure. A total of 50 children (5 boys and 11 girls from a second-grade classroom, 9 boys and 8 girls from a fourth-grade classroom, and 9 boys and 8 girls from a sixth grade classroom) participated in six individual sessions. One attribute question was given in each session, while the final session was used to assess reliability of responses on selected items from each of the six questions. Reliability (proportion of all choices that were the same upon retest) across all questions was .66 for second graders (ranging from .64 to .68 for individual questions), .76 for fourth graders (.72 to .82), and .72 for sixth graders (.70 to .75 for individual questions). These values correspond well with those reported in previous research using this method.

After children's individual choices had been obtained, objective measures of each of the ability attributes were made, so that the accuracy of children's concepts could be assessed. Reading and mathematics abilities were indexed by children's total scores for the

reading and mathematics sections of the Comprehensive Tests of Basic Skills. Running speed was measured as each child ran a fixed distance. Classroom teachers were asked to rank each child according to 1) skill in drawing, and 2) popularity with other children. Two fourth grade teachers agreed well in their evaluations of children's popularity (correlation = .72, $p = .001$), while three sixth grade teachers also agreed on popularity of children in their classroom to a significant extent (correlations ranged from .50 to .70, all p's less than .05).

## Results

At each grade, children's choices for each ability were correlated with those made for each other ability questioned. In examining the objective measures, it was found that several of the abilities were moderately correlated with each other. For this reason, partial correlations were used, to allow us to determine the extent to which the children's judgments of the various abilities were related, when the influence of actual relationships between the abilities was controlled. Thus, for example, when examining the degree to which the children viewed classmates who were seen as proficient in math as also being proficient in reading, the actual correlation between achievement in reading and math was held constant statistically.

Both second and fourth graders showed high intercorrelations of responses to all questions (Table 1). For example, children viewed as good at drawing were also viewed as good in both math and reading and as fast runners, and also, were well liked by their classmates. These findings suggest little differentiation of concepts of classmates'

abilities at these two grade levels. By sixth grade, there are fewer significant intercorrelations. Sixth graders differentiate clearly between drawing skill and other attributes and are beginning to differentiate math skill from other attributes.

Accuracy of children's concepts was assessed by comparing choices with objective measures obtained for each grade level (Table 2). At second grade, children's choices of liked peers correspond to the teacher's choices of popular children (correlation = .50, $p < .05$). The children also show some agreement with the teacher's evaluation of the children's drawing skills. However, for math, reading, and running, second graders are not at all accurate in their evaluations of classmates' abilities. Fourth graders showed agreement with the teacher for popular children (correlation = .56, $p < .05$). They were also accurate in judging running speed of their classmates (correlation = .74, $p < .01$). There was also an increase over second grade in ability to judge math and reading skills, and a decrease in agreement with teacher evaluations of drawing ability. Sixth graders were in strong agreement with teachers on popularity (correlation = .80, $p < .001$), but on several other attributes (running speed and drawing), they were less accurate than the younger groups. Accuracy of judgments of reading and math skill remained fairly constant from fourth to sixth grade.

## Conclusions

1.) Children show increasing differentiation in concepts of peers' abilities over the elementary school years.

2.) Accuracy in evaluating classmates' abilities increases from second to fourth grade; beyond that level, children's varied experiences in the classroom may make it difficult for them to evaluate certain peer attributes (e.g., drawing skill).

3.) Differentiation of attributes within the ability domain appears to be a later and more gradual development than is differentiation according to attributes from several different domains, studied in previous research.

## References

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Table 1

Partial Correlations of Choices for Each Ability Question by Children in Grades 2, 4, and 6

| | Reads | Math | Runs | Draws |
|---|---|---|---|---|
| **Grade 2 (N = 16)** | | | | |
| Likes | .65* | .51* | .85*** | .75*** |
| Reads | | .89*** | 82** | .72** |
| Math | | | .55* | .73** |
| Runs | | | | .59* |
| **Grade 4 (N = 17)** | | | | |
| Likes | .84*** | .78*** | .74*** | .84*** |
| Reads | | .89*** | .80*** | .93*** |
| Math | | | .87*** | .84*** |
| Runs | | | | .84*** |
| **Grade 6 (N = 17)** | | | | |
| Likes | .64** | .58* | .63** | .38 |
| Reads | | .90*** | .63** | .12 |
| Math | | | .49 | .26 |
| Runs | | | | .71** |

*p < .05

**p < .01

***p < .001

Table 2

Relationships between Children's Choices and Independent Assessments of Abilities or Characteristics

| | Grade | | |
|---|---|---|---|
| | 2 | 4 | 6 |
| "Likes Question with Teacher Ranking | .50* | .56* | .80*** |
| "Read" Question with Reading Achievement | .00 | .31 | .30 |
| "Math" Question with Math Achievement | .04 | .41 | .42 |
| "Runs" Question with Running Speed | -.07 | .74** | .31 |
| "Draws" Question with Teacher Ranking | .39 | .10 | -.08 |

*$p < .05$

**$p < .01$

***$p < .001$